



# COVID-19 Prevention Program for Older Adults: A Systematic Review

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## ABSTRACT

This study was designed to examine COVID-19 prevention among seniors aged 55 years and older living in the suburbs of Miami, Florida. We worked with the Community Health and Empowerment Network, Inc., a non-profit organization which provides health education, health screening services, and essential resources such as food, school materials, and pet care to individuals in the low-income and underserved population to close the health gaps in the community, decrease the rate of health disparities in south Florida, and prevent infectious diseases, including HIV and AIDS, heart diseases, childhood obesity, and other health conditions. The study examined 200 adults aged 55 years and older who have already received complete vaccine. A survey program was e-mailed, texted, or mailed to them for completion. The survey weekly evaluated the participants' knowledge of COVID-19 symptoms, data collection (quantitative and qualitative), assess their knowledge on the spread of the virus, health education on staying safe during uncertain times, and when to seek emergency help. Subsequently, a zoom meeting was conducted once every week, during which several educational materials were shared, and any concerns they might have been clarified. Following these interventions, early symptoms of depression, suicidality, and other mental instabilities, could be diagnosed and treated.

**Keywords:** COVID-19; Older adults; Prevention; Health

## INTRODUCTION

The Community Health Empowerment Network Inc. is an organization created to serve the people of northern Miami-Dade, County Florida. According to the recent census, the total population of Northern Miami is currently 61,435 [1]. The poverty rate in this community is 21.5%. The largest ethnic groups in this community were Black or African Americans (60.2%), Followed by White Hispanics (22.2%), White non-Hispanic (9.66%), other Hispanic (2.51%), and Black or African American Hispanic (2.01%) [2]. In Northern Miami-Dade County, 80.4% of its population has a high school diploma, while 30.7% have bachelor's degree or higher. The median household income is \$51,171, with \$29,760 income per capita [3]. The total number of participants is 200, including 70% female and 30% male. Black or African Americans comprise 50%, Hispanics comprise 40%, and Asians comprise 10%. The participants in this project are primarily senior citizens, including 90% above 60 years and 10% between 50-59 years. However, not all the participants were technology savvy, so, not all engaged in the virtual activities and survey.

Miami-Dade County recorded 149,093 cases of COVID-19 in August 2020 [4]. The pandemic had a significant impact on the participants due to the imposition of the lockdown and the virus. This may be because their age group has several pre-existing health conditions and poor immunity. Most live in group homes or nursing homes and are unfamiliar with the current technologies used to connect with families and friends virtually. While lockdowns may be necessary to contain the spread of the virus, it directly impacts their psychological wellbeing, leading to an increase in stress, anxiety levels, depression, and suicidal rate among these age groups. The lockdown due to COVID-19 in this community caused difficulties in accessing healthcare services for other non-covid-related cases, resulting in higher risk outcomes for those diagnosed with other chronic health conditions such as Hypertension, Diabetes, Arthritis, and so on. Over 80% of deaths from the pandemic occurred among those over the age of 65. Moreover, social distancing has led to increased loneliness, resulting in depression, and worsening of other mental health conditions such as Alzheimer's disease and Dementia.

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The use of digital devices and their availability among the elderly population during these times was a concern since not all devices have a video call capability, while some are too complicated to operate. However, creating awareness of the necessary resources that can be accessed and making such resources available to older populations could offer enormous benefits [5].

The current data for Miami-Dade County reported a total of 415,000 COVID-19 cases with 5503 deaths. The daily COVID-19 average incidence rate is reported at 42.49 cases per 100,000 population, and fatality rate at 1.8 deaths per 100 cases. The number of people living in the county who are 65 years and older is 423,353, thus accounting for 16.7% of the total population of Miami-Dade [6].

This study examines COVID-19 prevention among the elderly population living in North Miami-Dade, Florida, and creates a virtual COVID-19 prevention program, including the planning, implementation, and evaluation. We identified the population at significant risk of death by the virus, developed and delivered a program virtually using pre-and post-learning acquisition surveys (Figure 1), and evaluate the health program’s short-term, intermediate, and long-term outcomes. Moreover, this study assessed the essential needs of the target population, such as easy access to healthcare services, pets’ needs, and keeping them active and engaged during the lockdown.

The core competencies of this review include:

- Assess population needs, assets, and capacities that affect communities’ health.
- Advocate political, social, or economic policies and programs that will improve health in diverse populations through the proposed program and selected topics.
- Application of cultural values and practices awareness to the design or implement public health policies and programs.
- Propose strategies to identify stakeholders and build coalitions and partnerships to influence public health outcomes by conducting a stakeholder analysis to identify suitable options.
- Develop various practical approaches for stakeholder’s engagement.
- Communicate audience-appropriate public health content by

creating a concise written product through a multi-draft process and providing an oral presentation of said product to relevant stakeholders.

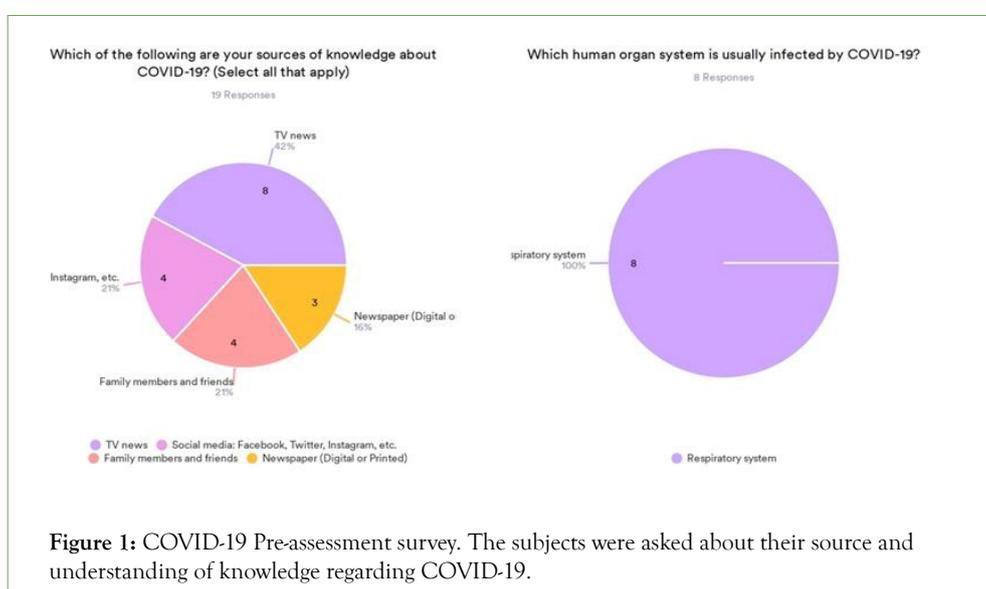
## MATERIALS AND METHODS

### Participants questions

- What preventive measures are necessary for COVID-19 prevention?
- What to do when infected with COVID-19?
- How do you stay connected during lockdown to reduce stress and depression?
- What are the different ways to stay active and healthy during the pandemic?
- What do you understand or know about COVID-19? (Figures 2 and 3).

### We used the following methods to solve the public health concerns in our target community

- **Digital learning:** We organized weekly Zoom meetings wherein we educate participants on preventive methods to protect themselves from getting infected (such as the proper use of masks, regular handwashing, clean environment, and eating healthy), when to seek medical help, and symptoms and understanding of the COVID-19.
- Exercise routines and other activity projects were organized virtually.
- Access to healthcare services was made easy by helping participants contact their primary care doctors *via* Telehealth, home delivery of prescription medication, and health services for their pets.
- The essential needs of all participants were met, such as preparing meals for the seniors and their pets’ supplies.
- Ensuring they know the place and time for receiving their COVID-19 vaccines with free transportation to and from the vaccination centers.
- Forming a COVID-19 vaccination and post-intervention Survey (Figure 3).



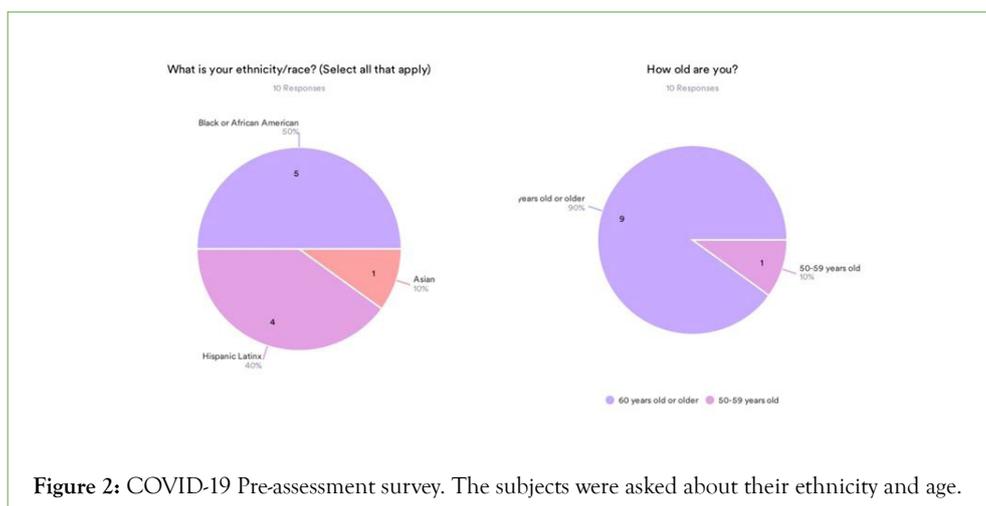


Figure 2: COVID-19 Pre-assessment survey. The subjects were asked about their ethnicity and age.

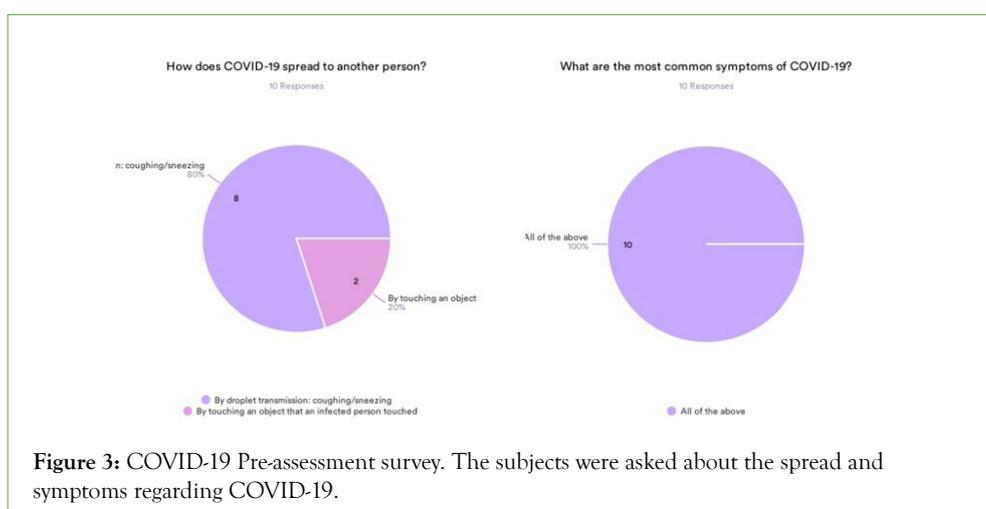


Figure 3: COVID-19 Pre-assessment survey. The subjects were asked about the spread and symptoms regarding COVID-19.

- Drafting a request to the government to increase technology access and implement digital literacy programs among the elderly population by ensuring that those on Medicare are offered a smartphone designed specifically for the elderly users.
- Our health promotion program aims to ensure that seniors living in the low-income area of north Miami-Dade, county Florida, receive the required help and stay healthy through uncertain times.
- **Effective communication:** Typically, in public health, health communication is either verbal, written, or both. When creating a health communication strategy, it is imperative that a good understanding of the audience, their culture and way of life, education level, ethnic group, and socioeconomic status are all considered. Language also played a vital role in communication.

#### Some of the effective communication strategies used during the project activities includes:

- Utilizing research-based resources that are proven to be effective in creating health promotion plans.
- Studying the culture, language, and religion of the audience.
- Studying the standard means of news dissemination for the aging population, including the local radio station and TV station [7].

The study aimed to prevent the spread of COVID-19 infection among the elderly population living in North Miami-Dade, the county in Florida, and most of the audience are retirees. In this community, about 40% speak Spanish; not all of them are college graduates, and all are Christians. Hence, our weekly health

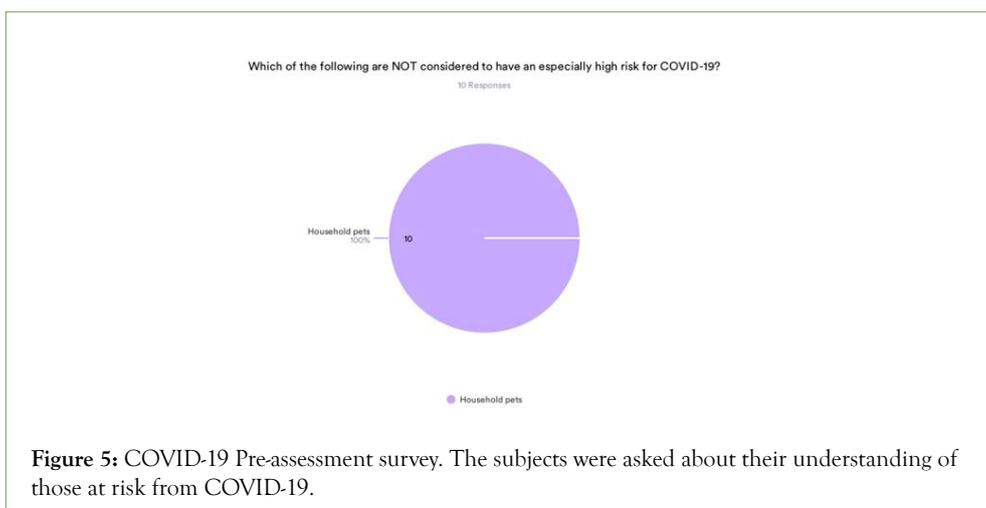
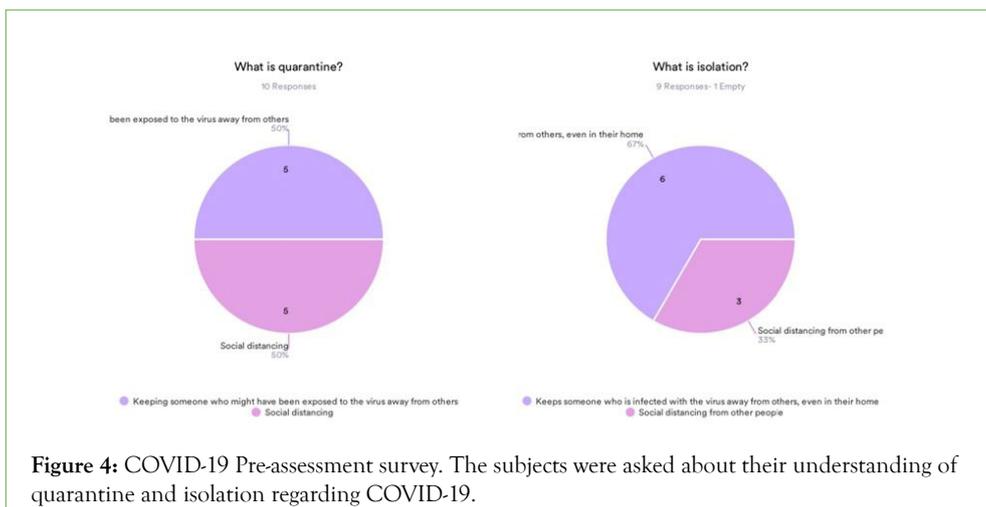
program communication with them includes English and Spanish languages. We also send them flyers to read about staying safe during the pandemic, text messages on best practices to help them stay active, and reminder messages for their scheduled health check-ups with their primary care doctors.

In summary, a good understanding of the target audience is a prerequisite to a good health-communication strategy. Our participants have all received their COVID-19 vaccines with our weekly health communication strategies and efforts to convince them of the safety of the COVID-19 vaccines.

#### Project evaluation

The two primary methods used for evaluating the efficacy and stability of the health promotion implementation that was performed were:

**Qualitative evaluation:** With this, we replicated prior methods proven to be effective, such as interviews, focus groups, and observation [8]. We emailed (interview) questionnaires to all participants in the form of pre-and post-COVID-19 knowledge assessment and vaccination surveys to assess the impact and understanding of the pandemic in the community and gauge how favourable the community might be towards receiving the vaccine. The focus group came together every Monday morning, during which we discussed several ways to stay active and healthy through the pandemic. The participants were also able to raise their concerns, ask questions, and receive feedback on the surveys they had participated. Lastly, the observational method was conducted during the weekly zoom meetings virtually (Figures 4 and 5).



**Quantitative evaluation:** This method examined the data analysis and collection. It was used in assessing the impact, outcomes, and generalizability of the health promotion program implemented in the target community. We collected data such as ethnicity, age of participants (55+), level of education, occupation or retired, health records, income, and gender (Figure 1). With these data, we assembled graphs depicting the structure and overview of the target community (Figure 1). This method assists in designing appropriate health programs fitting individual community interests.

The public health model suitable for this target population is the Trans theoretical Model (the Stages of Change). We aim to ensure our target population eats healthy meals during the pandemic and avoids consuming processed foods. This theory assumes that people do not change their behaviours quickly and decisively [9]. Instead, a change in habitual behaviour occurs continuously through a cyclical process:

**Pre-contemplation:** This is when people do not intend to change their behaviour. During this stage, we continue to educate them on health risks associated with unhealthy or unbalanced nutrition and how such behaviour might impact their immune system while fighting COVID-19.

**Contemplation:** This is when people begin intending to make changes. We will reinforce this behavioral stage by providing them with nutritious food items and cooked meals.

**Preparation or determination:** This is when they are ready to start healthy eating practices. We will ensure they have access to the

required meals.

**Action:** This happens with recently changed behaviour and slow adaptation to the new healthy eating plan. We continue to encourage them and take surveys so that we can make changes as necessary.

**Maintenance:** This stage occurs when people can sustain their new behaviour change for at least six months. We will continue to evaluate the success of the new health plan, send surveys to them to inquire about any struggle, complaint, or challenges they might have, and address them quickly.

**Termination:** This is when the participants fully adapt to the new behaviour and do not return to old habits. Here, we will continue to send them new healthy varieties of food recipes to continue building on their progress.

**Contact tracing:** Contact tracing is a method used to evaluate those at risk of contracting the virus after meeting a person who recently tested positive for the virus.

Research shows that considering the estimates for COVID-19 transmission, under effective contact tracing, less than one in six cases yield any subsequent untraced infections. It also showed that changes to the definition of close contact do tend to reduce this burden, but with increased risk of untraced cases. This further explained that tracing using a contact method requiring over four hours of exposure is ineffective in controlling the spread of COVID-19 [10].

The ideology of the contact tracing strategy is to provide detailed survey information on social encounters from thousands of participants coupled to predictive models of control and contact tracing to investigate the possible efficacy of the method and the distribution of secondary cases that may go unnoticed or untraced.

#### **Community partnership with non-governmental organizations:**

Health is a complex concept, and its promotion requires a considerable amount of support from other organizations and professionals in other sub-fields of the health care sector to effectively improve all aspects of health promotion, including social, economic, cultural, and environmental determinants of health [11,12].

When selecting the partners for health promotion, we considered organizations with similar vision, mutual interest, respect, perspective as our organization and are willing to share ideas.

The community health and empowerment network, have partnerships with AARP, Clear Health Alliance, Simply Healthcare, and Pet smart charities. Our partners share a similar mission and vision as us by helping provide free COVID-19 tests, food supplies, pet foods, and masks to the target population in North Miami.

Partnering with the above-mentioned organizations enabled us to provide joint professional health education, joint conferences, and essential needs to the community. Partnering with another organization provides individual and community benefits, especially for the low-income and communities of color, by building on the civil rights movement and advancing social justice.

The AARP partnership helped ensure that all seniors in the target community (North Miami) have healthcare coverage, access to specialists, access to primary health providers (providing free transportation to and from appointments).

The PETSMART partnership made available free pet foods to pet owners who could not afford these due to the pandemic economic restraints.

The Clear Health Alliance and Simply healthcare provided free mobile clinics to the target community three times a week, including free health screenings and COVID testing. Medical advice was offered, and specialists' referrals were given to participants who needed it.

**Working with the team:** Teamwork is critical in every organization, including public health. We worked with several health clinics, state government agencies, and a few other organizations that primarily offered financial aid to our project. However, we also needed the support of Veterinarians and their clinics since our project provided pet foods and other pet supplies for needy or low-income families.

We did not collaborate with veterinarian's clinics at the start of our project, which was a significant need for low-income families. The Veterinary clinic COVID-19 protocols must be followed when working with them. Few clinics were open solely for critical care cases, while the less urgent services were cancelled. Hence, we sought the support of a few Veterinary clinics in the area which later showed interest in offering veterinary telemedicine work for the pets. However, such methods posed difficulty for first-time patients [13].

The Veterinary clinic eventually offered free healthcare services to our pets in the form of Curbside Veterinary services. During this, the pet owner would wait in their car after notifying the clinic of his arrival. The staff would pick the pets from the car and examine

them inside the mobile clinic. After examination, the staffs discuss the findings over a video call with the pet owner.

The challenges encountered with such pets' health care services were that not every resident owned a vehicle, making it a significant challenge. Additionally, with the COVID-19 restrictions, many pets that might need dental care and other less urgent care were not able to receive such services, which are usually the most common cause of hospital visits for pets.

We worked diligently on finding the best practice that could benefit our participants while caring for their pets.

#### **Data**

- According to the U.S Census Bureau, the overall population of older adults over the age of 65 in our target community of North Miami-Dade County increased from 14.5% in 2012-17% in 2019 (2,716,940 population) [14].
- A total number of 162,583 deaths from COVID-19 among adults 85 years and older has been reported in the U.S since the pandemic started. Among ages 75-84 years, 146,310 deaths, 115,381 deaths among ages 65-74, and 78883 deaths among ages 50-64 have been reported [14].
- The total number of deaths from COVID-19 among those in nursing homes or long-term care facilities is 105,097.
- An estimate of 95% of Americans who died of COVID-19 was over the age of 50 [15], and eight out of ten deaths have been among adults aged 65 and older.

## **RESULTS AND DISCUSSION**

### **Primary results**

- Older women than men reported anxiety or depression in the ratio of 38% vs. 30%.
- Adult's ages 65-75 years reported anxiety or depression at a 43% rate for Hispanics, non-Hispanic Whites (33%), Black (16%), and Asian (8%).
- Loss of household income due to the pandemic among older adults >65 years increased depression and anxiety than those who made over \$100,000 per year in the same age group.
- Older adults who live alone reported anxiety (27%) than those who live with family members (24%).
- Project outcomes and recommendations.
  - Our health promotion program aimed to prevent the spread of the COVID-19 pandemic among the aging population aged above 55 and living in the low-income community of Miami-Dade, County Florida. The expected outcomes on implementation of our program are:
    - Increased number of vaccinated adults in the community.
    - Substantial knowledge of several ways to avoid or prevent contracting and spread of the COVID-19 infection, such as physical distancing, mask-wearing, hand washing, and so on.
    - Cultivating the habit of good balanced nutrition.
    - Staying active and virtually connected with friends and family during the lockdown period.
    - Understanding of the importance of being in contact with their health providers and taking their prescribed medication.

• To determine the most suitable recommendations essential for this program, it is crucial to understand why the target population might reject the idea of getting vaccinated. Most of these reasons are based on cultural, religious, societal influences or rumours, and racial or ethnic myths. Some do not like or support the idea of using foetus tissue to produce the COVID-19 vaccine and hence reject it. Some religious beliefs are based on the idea that the vaccine serves as a means of distributing the evil mark of “666,” a sign of end-time, while some racial, ethnic group believes it is a way of eliminating or killing certain race.

### We recommend that we address the above-mentioned issues by using these two methods

**Pre-bunking:** This is when the community is warned ahead of time that they may be misled, and subsequently, the factual knowledge related to the vaccine is quickly shared, including any side effects that might be experienced after receiving the vaccine. This helps people become resilient to future manipulation attempts [16]. These can be achieved by warning people ahead of time about misinformation and educating them on any possible side effects from the vaccine and the importance of getting the vaccine.

**Debunking:** This method is used when misinformation has already spread. However, achieving success with this method is challenging, as people already hold pre-conceived notions from the heard false information, which continues to impact people’s perspectives and attitudes. The method follows a specific pattern: sharing factual data, warning against the false information with an example, explaining why it remains false, and lastly, repeating the factual data. These methods have proven to solve the problem related to vaccine misinformation effectively [16,17].

We performed other activities to improve the overall health of the target community, which was focused on encouraging them to receive the vaccine. There was a weekly virtual meeting that explained the importance of immunization and how it helps build immunity against the disease, strengthens the immune system, and clarified that getting vaccinated even without any symptoms of the disease is essential. They were also informed that immunization through vaccination is the safest way to protect against disease and that vaccines have prevented at least ten million deaths between 2010-2015; CDC had estimated that vaccinations protected over 21 million people from being hospitalized due to infectious disease(s).

More emphasis was laid on the benefits of the COVID-19 vaccine, including how it may prevent one from getting seriously ill if contracted with the virus, how it can protect the surrounding people, particularly people at high risk for severe illness from the virus. The COVID-19 vaccination is one of the crucial tools to stop the pandemic spread. They were explained how combining getting vaccinated and following CDC’s recommendations to protect yourself and others will offer the best protection from COVID-19. We also took into consideration the need to inform the community about the adverse effects of the COVID-19 vaccines, which could manifest in the forms of:

- Pain at the injection site
- Tiredness
- Headaches
- Muscle pain
- Chills

- Joint pain
- Fever
- Anaphylaxis (substantial allergic reaction)

## CONCLUSION

As the COVID-19 continues to spread, the unforeseen health complications have started to manifest. As travel restrictions across states, Nursing homes visits, and the world have changed the everyday life of billions of people, the world has had to adapt to the changes. The popularity of digital tools has proven to be successful in improving communications, thus, minimizing the negative impact of travel restriction, and social/physical distancing. Although, People have been able to socialize, work, attend classes, and have access to healthcare, virtually. However, similar benefits have not been evident among the elderly population who received some of the worst impact of the pandemic. More actions are needed from the governments to help increase accessibility to technology and implementation of digital literacy programs for these target population. The fight against COVID-19 is a continuous type, and we strongly believe that our health promotion and preventive program is applicable to every aging population around the world. We continue to create new health promotion programs to adjust to any new changes in the community.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

The ethical approval of the study was taken from the Institutional Review board of Institute of Epidemiology, Disease Control and Research (IEDCR), the reference number being IEDCR/IRB/2018/04, dated 23/04/2018. Prior to data collection verbal assent of the child (>7 years) and informed written consent of the guardian was ensured.

## CONSENT FOR PUBLICATION

Not applicable

## AVAILABILITY OF DATA AND MATERIAL

The original contribution presented in the study is included in the article. All inquiries can be directed to the corresponding author.

## FUNDING

The author declares that no funding was provided for the study, and so none is reported.

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